INTER-OFFICE MEMORANDUM

SUBJECT: More on the Hydrogeochemistry of the Slumbering Hills - Desert Valley Area, Humboldt County, Nevada(4589A)

DATE: 1/26/84

TO: J. E. Deymonaz

cc: John Wood
Stan Hamilton
H. J. Olson

FROM: H. D. Pilkington

To better evaluate the Sleeper Prospect from a geothermal point of view I had Bill Huntsman run a thermal log on a couple of the AMAX mineral exploration holes in September 1983. Hole #13 had a gradient of 40°C/km and Hole #16 had a gradient of 50°C/km. The gradients are average for the so-called "Battlemountain High".

The chemical analyses of waters from the Franklin Well and the Austin Well are given in Table I. The silica geothermometers suggests equilibrium temperatures of 86 to 90°C. Thus, the waters are probably the product of deep circulation rather than the final cooling stages of a fossil geothermal system.

H. D. Pilkington

HDP/c

Table I. Chemical Analysis of Waters from the Sleeper Prospect, Humboldt County, Nevada

	Wl4258 Franklin Well NWNE16T40NR35E	Wl4787 Austin Well SWSW19T40NR35E
Temp°C	15	20
Flow(GPM)	10	15
pH	8.1	7.3
Cl	540.0	176.0
F	1.1	1.0
SO_4	913.0	93.0
HCO_3	180.0	203
CO_3	0.0	0.0
SiO_2	65.8	70.2
Na	730.0	220.0
K	15.0	22.0
Ca	105.0	35.0
Mg	65.0	9.2
Li	0.07	0.03
B	2.9	1.2
TDS	2617.9	931.4
Ec(K)	3200.0	1050.0
$TqSiO_2$	114	117
$TcSiO_2$	86	90
TNa-K	111	217
TNa-K-Ca	98	180
TNa/Li	--	--
TLi	78	--